



JOINT IED DEFEAT ORGANIZATION NEWS STORY



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JIEDDO's Robotics Counter-IED Challenge a learning opportunity

By Staci George

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WASHINGTON — The Joint IED Defeat Organization recently took its search for the latest counter-IED robotic capabilities to a hypothetical battlefield at the McKenna Urban Operations Complex at Fort Benning, Ga., June 20-29.

The first-ever JIEDDO Counter-IED Robotics Challenge, part of the third annual Robotics Rodeo, featured 35 vendors competing in four categories—endurance, reconnaissance, detect and disrupt—to determine the most promising counter-IED capabilities and sensors that might be rapidly fielded to assist U.S. and coalition forces in Afghanistan.

Counter-IED robots provide warfighters with standoff distance from the deadly effects of IED detonations.

“We are looking for ways to improve speed and freedom of maneuverability in the counter-IED environment,” said Matt Way, a JIEDDO program integrator. “Robotics can provide standoff from explosions or clearing operations and reduce exposure to the warfighter.”

Each event challenged the robotic systems' capabilities to disable IED delivery systems in multiple environments, mitigate the effects of IED attacks on both mounted and dismounted troops and detect IEDs from a safe distance, said Way.

The challenge events “generated good discussion between JIEDDO and industry,” he said. “For some industry partners it is the first time they have had the opportunity to test their technology against threats representative of what happens in theater.”

Results and photographs of the winners can be found on the JIEDDO website [here](#).

RE2, Inc.'s ForeRunner Unmanned Ground Vehicle — known as a UGV — was the dismounted class winner in the endurance challenge, which measured speed and freedom of maneuverability of both mounted and dismounted support robots. The endurance challenge included three different classes of systems—mounted, dismounted and man-portable systems. Mounted systems are attached to soldiers' military vehicles, dismounted systems are ones soldiers carry when on foot patrol and man-portable systems are light enough to be carried by a single soldier and usually contained in a backpack.

“Providing our troops with high-speed route inspection capabilities is crucial to keep our warfighters out of harm's way,” Jorgen Pedersen, president and CEO of RE2, said in a press release. “This award validates our claim that the ForeRunner, with a speed of 40 kph, is the fastest vehicle in the dismounted support class of UGVs.”

TORC Robotic's Ground Unmanned Support Surrogate was the mounted class winner, while Advance Research Associate's Pointman was the man-portable class winner, Way said.

HDT Global's Protector, a wirelessly controlled and diesel-powered robot, won the disrupt challenge. Disrupt is the technical term for disabling an IED without detonating the device. The challenge assessed the system's ability to disable IED pressure-sensitive trigger switches in a tactical environment.

"We are thrilled to showcase the advance capabilities of HDT's revolutionary, life-saving technologies at the Robotics Rodeo," Dr. Tom Van Doren, Chief Operating Officer, said in a press release.

Protector is only 3 feet wide and 5 feet long. It lightens loads for troops by carrying up to 100 pounds of supplies and simultaneously clear paths of explosive threats.

QinetiQ's Bobcat and Mesa's Acer were close second- and third-place winners, respectively, in the disrupt challenge, Way said.

The winner of the reconnaissance challenge was iRobot's First Look. It found 21 of 35 colored eggs with identification tags, which simulated IEDs placed throughout a two-story building.

"This challenge involved smaller portable unmanned ground vehicles inspecting an urban environment. The robots went through windows, climbed stairs, maneuvered around furniture and various items and even made it to the roof to search," Way said.

Applied Research Associate's Pointman and Boston Dynamics' RHex were second- and third-place winners, respectively, in the reconnaissance challenge, said Way.

Vendor participants really liked the hands-on, out-in-the-field element to displaying their technologies, he said. For instance, Pointman, a 14-pound remote-controlled vehicle with a mounted camera, walked up the staircase of a two-story building during the reconnaissance challenge.

During each challenge, participants observed the strengths and weaknesses of their systems. Soldiers also got to see the robots in action during the challenges. A team of six Army captains and two non-commissioned officers, all with deployment experience, observed each of the four challenges and provided feedback from a warfighter perspective on each system to the JIEDDO evaluators.

Participants did not simply resolve to go back to the proverbial drawing board and make changes; they also shared with JIEDDO staff their appreciation for such an event.

"Several industry partners have commented on the learning opportunity and the ability to understand areas for improvement with their technology," said Way.

The robotics challenge events were also a learning experience for JIEDDO.

"We definitely learned some lessons," Way said. "There are some things we can tweak and improve, but overall, we were impressed with how everything ran and the results we saw."

In the upcoming weeks, Way and his team will be crunching the data collected to provide formal feedback to the industry partners that participated and to the U.S. government partners to assist in making decision on capabilities and technologies that could make an impact for the warfighter.

"We have to digest the data from this challenge before we can begin to plan future challenges," he said.

The Robotics Rodeo was a collaborative partnership between JIEDDO, the Maneuver Battle Lab and the

U.S. Army Tank and Automotive Research, Development and Engineering Command. More than 40 vendors and five universities showcased nearly 75 different technologies during operational vignettes, technical challenges and an extravaganza featuring vendor booths and freestyle demonstrations of technologies.

“We really need a more collaborative effort to solve this counter-IED problem,” Way said. “It’s been a great partnership working with the Maneuver Battle Lab because they can rapidly help us get an assessment here with troops who have deployment experience. That’s a serious risk-mitigator for us in delivering a counter-IED capability with the right performance to the warfighter.”